

1   **WHAT IS CLAIMED IS:**

2  
3   1.     A process useful for providing a coating for a solid surface, comprising:

4  
5         applying a primer onto the solid surface to form a primer coating, wherein the primer is  
6     prepared from an amine curing agent, a polysulfide toughening agent, an epoxy resin, a rubber  
7     toughening agent, a fire retardant, a glass fiber thixotrope and impact toughening agent, and a  
8     pigment;

9  
10        applying a topcoat onto the primer coating, wherein the topcoat is prepared from an  
11   amine curing agent, a polysulfide toughening agent, an epoxy resin, a rubber toughening agent, a  
12   fire retardant, a glass fiber thixotrope and impact toughening agent, a pigment, and an abrasive  
13   aggregate.

14  
15   2.     The process of claim 1 wherein the topcoat is also prepared from an ultraviolet light  
16   stabilizer.

17  
18   3.     The process of claim 1 wherein the primer is also prepared from a corrosion inhibitor.

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20   4.     The process of claim 1 wherein the primer is also prepared from a moisture penetration  
21   inhibitor.

22  
23   5.     The process of claim 1, wherein the topcoat is applied in a manner such that a plurality of  
24   ridges are formed by the topcoat.

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26   6.     The process of claim 1, wherein the surface is a deck of a ship.

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28   7.     The process of claim 1, wherein the surface is a metal surface.

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30   8.     The process of claim 1, wherein the surface is a deck of an aircraft carrier.

1  
2 9. The process of claim 1, wherein the surface is on an oil well drilling platform.

3  
4 10. The process of claim 1, wherein the topcoat is applied by rolling, trowelling, raking, or  
5 spraying.

6  
7 11. The process of claim 1, wherein the glass fiber has average fiber diameter of about 0.2 to  
8 about 5 microns and a surface area as measured by BET of about 0.01 to about 25 meters squared  
9 per gram.

10  
11 12. The process of claim 1, wherein the primer is prepared from about 20 to about 60 percent  
12 of the amine curing agent.

13  
14 13. The process of claim 1, wherein the primer is prepared from about 10 to about 30 percent  
15 of the polysulfide toughening agent.

16  
17 14. The process of claim 1, wherein the primer is prepared from about 0.01 to about 15  
18 percent based on the total weight of the primer of an corrosion inhibitor.

19  
20 15. The process of claim 1, wherein the primer is prepared from about 0.01 to about 10  
21 percent based on the total weight of the primer of the glass fiber,

22  
23 16. The process of claim 1, wherein the primer is also prepared from about 0.01 to about 3  
24 percent based on the total weight of the primer of an moisture penetration inhibitor.

25  
26 17. The process of claim 1, wherein the primer is prepared from about 5 to about 35 percent  
27 based on the total weight of the primer of the fire retardant.

28  
29 18. The process of claim 1, wherein the primer is prepared from about 20 to about 90 percent  
30 based on the total weight of the primer of the epoxy resin.

1  
2 19. The process of claim 1, wherein the primer is prepared from about 5 to about 40 percent  
3 based on the total weight of the primer of the rubber toughening agent.

4  
5 20. The process of claim 1, wherein the primer is prepared from about 0.01 to about 30  
6 percent based on the total weight of the primer of the pigment.

7  
8 21. The process of claim 1, wherein the topcoat is prepared from about 10 to about 50 percent  
9 based on the total weight of the topcoat of the amine curing agent.

10  
11 22. The process of claim 1, wherein the topcoat is prepared from about 0.01 to about 10  
12 percent based on the total weight of the topcoat of the polysulfide toughening agent.

13  
14 23. The process of claim 1, wherein the topcoat is prepared from about 0.01 to about 30  
15 percent based on the total weight of the topcoat of the pigment.

16  
17 24. The process of claim 1, wherein the topcoat is prepared from about 0.01 to about 45  
18 percent based on the total weight of the topcoat of the abrasive aggregate.

19  
20 25. The process of claim 1, wherein the topcoat is prepared from about 0.01 to about 10  
21 percent of the glass fiber.

22  
23 26. The process of claim 1, wherein the topcoat is prepared from about 0.01 to about 20  
24 percent of the fire retardant.

25  
26 27. The process of claim 1, wherein the topcoat is prepared from about 10 to about 45 percent  
27 based on the total weight of the topcoat of the epoxy resin.

28  
29 28. The process of claim 1, wherein the topcoat is prepared from about 4 to about 20 percent  
30 based on the total weight of the topcoat of the rubber toughening agent.

1  
2 29. The process of claim 1, wherein the topcoat is prepared from about 0.01 to about 10  
3 percent based on the total weight of the topcoat of an ultraviolet light stabilizer.  
4

5 30. The process of claim 1, wherein the primer is also prepared from a moisture penetration  
6 inhibitor.  
7

8 31. The process of claim 1, wherein the abrasive aggregate is comprised of a mixture of  
9 aluminum powder and aluminum pellets.  
10

11 32. The process of claim 1, wherein the primer and topcoat are substantially free of solvents.  
12

13 33. An epoxy topcoat comprising a cured mixture that is formulated from  
14 an epoxy resin,  
15 a polysulfide toughening agent,  
16 optionally, an ultraviolet light stabilizer,  
17 a pigment,  
18 a glass fiber thixotrope and impact toughening agent,  
19 an abrasive aggregate,  
20 a fire retardant,  
21 an amine curing agent, and  
22 a rubber toughening agent.  
23

24 34. The epoxy topcoat of claim 33, wherein the glass fiber has average fiber diameter of  
25 about 0.2 to about 5 microns and a surface area as measured by BET of about 0.01 to about 25  
26 meters squared per gram.  
27

28 35. The epoxy topcoat of claim 33, wherein the topcoat is formulated from about 10 to about  
29 50 percent of the amine curing agent.  
30

1 36. The epoxy topcoat of claim 33, wherein the topcoat is formulated from about 0.01 to  
2 about 10 percent of the polysulfide toughening agent.

4 37. The epoxy topcoat of claim 33, wherein the topcoat is formulated from about 0.01 to  
5 about 10 percent of the ultraviolet light stabilizer.

7 38. The epoxy topcoat of claim 33, wherein the topcoat is formulated from about 0.01 to  
8 about 45 percent of the abrasive aggregate.

10 39. The epoxy topcoat of claim 33, wherein the topcoat is formulated from about 0.01 to  
11 about 10 percent of the glass fiber.

13 40. The epoxy topcoat of claim 33, wherein the topcoat is formulated from about 0.01 to  
14 about 20 percent of the fire retardant.

16 41. The epoxy topcoat of claim 33, wherein the topcoat is formulated from about 0.01 to  
17 about 30 percent of the pigment.

19 42. The epoxy topcoat of claim 33, wherein the topcoat is formulated from about 20 to about  
20 90 percent of the epoxy resin.

22 43. The epoxy topcoat of claim 33, wherein the topcoat is formulated from about 4 to about  
23 20 percent of the rubber toughening agent.

25 44. An epoxy primer comprising a cured mixture that is made from  
26 an amine curing agent,  
27 a polysulfide toughening agent,  
28 a fire retardant,  
29 a glass fiber thixotrope and impact toughening agent,  
30 an epoxy resin,

1 a rubber toughening agent,  
2 a pigment,  
3 optionally, a corrosion inhibitor, and  
4 optionally, a moisture penetration inhibitor.  
5

6 45. The primer of claim 44, wherein the glass fiber has average fiber diameter of about 0.2 to  
7 about 5 microns and a surface area as measured by BET of about 0.01 to about 25 meters squared  
8 per gram.  
9

10 46. The primer of claim 44, wherein the mixture is also made from an abrasive aggregate.  
11

12 47. The primer of claim 44, wherein the primer is substantially free of solvents.  
13

14 48. A process useful for providing a coating for a solid surface, comprising:  
15

16 applying a coating onto the solid surface, wherein the coating is prepared from

17 an amine side which comprises a mixture of:

18 an amine curing agent,

19 a polysulfide toughening agent; and

20 an epoxy side which comprises a mixture of:

21 an epoxy resin,

22 a rubber toughening agent, and  
23

24 wherein the coating is also prepared from a fire retardant, a glass fiber thixotrope and  
25 impact toughening agent, a pigment, and an abrasive aggregate, and  
26

27 wherein the surface may be primed or un-primed prior to application of the topcoat.  
28

29 49. The process of claim 48 wherein the coating is also prepared from a corrosion inhibitor.  
30

1 50. The process of claim 48 wherein the coating is also prepared from a moisture penetration  
2 inhibitor.

4 51. The process of claim 48 wherein the coating is also prepared from an ultraviolet light  
5 stabilizer.

7 52. A method of manufacturing an epoxy side and an amine side for use in the formation of a  
8 coating, comprising:

10 forming a mixture of an amine side from an amine curing agent and a polysulfide  
11 toughening agent,

13 forming a mixture of an epoxy side from an epoxy resin and a rubber toughening agent,

15 wherein the amine side is also formed from a fire retardant, a glass fiber thixotrope and  
16 impact toughening agent, a pigment, an abrasive aggregate, a moisture penetration inhibitor, an  
17 ultraviolet light stabilizer, or combination thereof, and

19 wherein the epoxy side is also formed from a fire retardant, a glass fiber thixotrope and  
20 impact toughening agent, a pigment, an abrasive aggregate, a moisture penetration inhibitor, an  
21 ultraviolet light stabilizer, or combination thereof.

23 53. An epoxy coating formulated from (a) an amine curing agent, (b) a polysulfide  
24 toughening agent, (c) an epoxy resin, (d) a rubber toughening agent, and (e) a fire retardant, a  
25 glass fiber thixotrope and impact toughening agent, a pigment, a corrosion inhibitor, a moisture  
26 penetration inhibitor, an ultraviolet light stabilizer, an abrasive aggregate, or a combination  
27 thereof.

29 54. The coating of claim 53, wherein the coating is prepared from about 20 to about 60  
30 percent of the amine curing agent.

1  
2 55. The coating of claim 53, wherein the coating is formulated from about 0.01 to about 30  
3 percent of the polysulfide toughening agent.

4  
5 56. The coating of claim 53, wherein the coating is formulated from about 0.01 to about 15  
6 percent based on the total weight of the coating of the corrosion inhibitor.

7  
8 57. The coating of claim 53, wherein the coating is formulated from about 0.01 to about 10  
9 percent based on the total weight of the coating of the glass fiber.

10  
11 58. The coating of claim 53, wherein the coating is formulated from about 0.01 to about 3  
12 percent based on the total weight of the coating of an moisture penetration inhibitor.

13  
14 59. The coating of claim 53, wherein the coating is prepared from about 0.01 to about 35  
15 percent based on the total weight of the coating of the fire retardant.

16  
17 60. The coating of claim 53, wherein the coating is prepared from about 10 to about 90  
18 percent based on the total weight of the coating of the epoxy resin.

19  
20 61. The coating of claim 53, wherein the coating is prepared from about 4 to about 40 percent  
21 based on the total weight of the coating of the rubber toughening agent.

22  
23 62. The coating of claim 53, wherein the coating is prepared from about 0.01 to about 30  
24 percent based on the total weight of the coating of the pigment.

25  
26 63. The coating of claim 53, wherein the coating is prepared from about 0.01 to about 10  
27 percent based on the total weight of the coating of the ultraviolet light stabilizer.

28  
29 64. The coating of claim 53, wherein the coating is prepared from about 0.01 to about 45  
30 percent based on the total weight of the coating of the abrasive aggregate.



1  
2 65. The coating of claim 53, wherein the coating is substantially free of solvents.

3  
4 66. The coating of claim 53, wherein the glass fiber is present and has average fiber diameter  
5 of about 0.2 to about 5 microns and a surface area as measured by BET of about 0.01 to about 25  
6 meters squared per gram.

7  
8 67. A process useful for providing a coating for a solid surface, comprising: applying a  
9 coating onto the solid surface, wherein the coating is prepared from (a) an amine curing agent,  
10 (b) a polysulfide toughening agent, (c) an epoxy resin, (d) a rubber toughening agent, and (e) a  
11 fire retardant, a glass fiber thixotrope and impact toughening agent, a pigment, a corrosion  
12 inhibitor, a moisture penetration inhibitor, an ultraviolet light stabilizer, an abrasive aggregate, or  
13 a combination thereof.

14  
15 68. The process of claim 67, wherein the coating is prepared from about 20 to about 60  
16 percent of the amine curing agent.

17  
18 69. The process of claim 67, wherein the coating is formulated from about 0.01 to about 30  
19 percent of the polysulfide toughening agent.

20  
21 70. The coating of claim 67, wherein the coating is formulated from about 0.01 to about 15  
22 percent based on the total weight of the coating of the corrosion inhibitor.

23  
24 71. The process of claim 67, wherein the coating is formulated from about 0.01 to about 10  
25 percent based on the total weight of the coating of the glass fiber.

26  
27 72. The process of claim 67, wherein the coating is formulated from about 0.01 to about 3  
28 percent based on the total weight of the coating of an moisture penetration inhibitor.

1 73. The process of claim 67, wherein the coating is prepared from about 0.01 to about 35  
2 percent based on the total weight of the coating of the fire retardant.

4 74. The coating of claim 67, wherein the coating is prepared from about 10 to about 90  
5 percent based on the total weight of the coating of the epoxy resin.

7 75. The process of claim 67, wherein the coating is prepared from about 4 to about 40 percent  
8 based on the total weight of the coating of the rubber toughening agent.

10 76. The process of claim 67, wherein the coating is prepared from about 0.01 to about 30  
11 percent based on the total weight of the coating of the pigment.

13 77. The process of claim 67, wherein the coating is prepared from about 0.01 to about 10  
14 percent based on the total weight of the coating of the ultraviolet light stabilizer.

16 78. The process of claim 67, wherein the coating is prepared from about 0.01 to about 45  
17 percent based on the total weight of the coating of the abrasive aggregate.

19 79. The process of claim 67, wherein the coating is substantially free of solvents.

21 80. The process of claim 67, wherein the glass fiber is present and has average fiber diameter  
22 of about 0.2 to about 5 microns and a surface area as measured by BET of about 0.01 to about 25  
23 meters squared per gram.

25 81. A process useful for providing a coating for a solid surface, comprising:

27 applying a primer onto the solid surface to form a primer coating, wherein the primer is  
28 prepared from an amine curing agent, an epoxide-containing toughening agent, an epoxy resin, a  
29 rubber toughening agent, a fire retardant, an optional glass fiber thixotrope and impact  
30 toughening agent, and a pigment;

1  
2 applying a topcoat onto the primer coating, wherein the topcoat is prepared from an  
3 amine curing agent, an epoxide-containing toughening agent, an epoxy resin, a rubber  
4 toughening agent, a fire retardant, an optional glass fiber thixotrope and impact toughening  
5 agent, a pigment, and an abrasive aggregate.  
6

7 82. The process of claim 81 wherein the topcoat is also prepared from an ultraviolet light  
8 stabilizer.  
9

10 83. The process of claim 81 wherein the primer is also prepared from a corrosion inhibitor.  
11

12 84. The process of claim 81 wherein the primer is also prepared from a moisture penetration  
13 inhibitor.  
14

15 85. The process of claim 81, wherein the topcoat is applied in a manner such that a plurality  
16 of ridges are formed by the topcoat.  
17

18 86. The process of claim 81, wherein the surface is a deck of a ship.  
19

20 87. The process of claim 81, wherein the surface is a metal surface.  
21

22 88. The process of claim 81, wherein the surface is a deck of an aircraft carrier.  
23

24 89. The process of claim 81, wherein the surface is on an oil well drilling platform.  
25

26 90. The process of claim 81, wherein the topcoat is applied by rolling, trowelling, raking, or  
27 spraying.  
28

1 91. The process of claim 81, wherein the glass fiber is present in the topcoat and wherein the  
2 glass fiber has average fiber diameter of about 0.2 to about 5 microns and a surface area as  
3 measured by BET of about 0.01 to about 25 meters squared per gram.

4  
5 92. The process of claim 81, wherein the primer is prepared from about 20 to about 60  
6 percent of the amine curing agent.

7  
8 93. The process of claim 81, wherein the primer is prepared from about 10 to about 30  
9 percent of the epoxide-containing toughening agent, and wherein the epoxide-containing  
10 toughening agent is a polysulfide, a polythiourea, or combination thereof.

11  
12 94. The process of claim 81, wherein the primer is prepared from about 0.01 to about 15  
13 percent based on the total weight of the primer of an corrosion inhibitor.

14  
15 95. The process of claim 81, wherein the primer is prepared from about 0.01 to about 10  
16 percent based on the total weight of the primer of the glass fiber.

17  
18 96. The process of claim 81, wherein the primer is also prepared from about 0.01 to about 3  
19 percent based on the total weight of the primer of an moisture penetration inhibitor.

20  
21 97. The process of claim 81, wherein the primer is prepared from about 5 to about 35 percent  
22 based on the total weight of the primer of the fire retardant.

23  
24 98. The process of claim 81, wherein the primer is prepared from about 20 to about 90  
25 percent based on the total weight of the primer of the epoxy resin.

26  
27 99. The process of claim 81, wherein the primer is prepared from about 5 to about 40 percent  
28 based on the total weight of the primer of the rubber toughening agent.

1 100. The process of claim 81, wherein the primer is prepared from about 0.01 to about 30  
2 percent based on the total weight of the primer of the pigment.

4 101. The process of claim 81, wherein the topcoat is prepared from about 10 to about 50  
5 percent based on the total weight of the topcoat of the amine curing agent.

7 102. The process of claim 81, wherein the topcoat is prepared from about 0.01 to about 10  
8 percent based on the total weight of the topcoat of the epoxide-containing toughening agent.

10 103. The process of claim 81, wherein the topcoat is prepared from about 0.01 to about 30  
11 percent based on the total weight of the topcoat of the pigment.

13 104. The process of claim 81, wherein the topcoat is prepared from about 0.01 to about 45  
14 percent based on the total weight of the topcoat of the abrasive aggregate.

16 105. The process of claim 81, wherein the topcoat is prepared from about 0.01 to about 10  
17 percent of the glass fiber.

19 106. The process of claim 81, wherein the topcoat is prepared from about 0.01 to about 20  
20 percent of the fire retardant.

22 107. The process of claim 81, wherein the topcoat is prepared from about 10 to about 45  
23 percent based on the total weight of the topcoat of the epoxy resin.

25 108. The process of claim 81, wherein the topcoat is prepared from about 4 to about 20 percent  
26 based on the total weight of the topcoat of the rubber toughening agent.

28 109. The process of claim 81, wherein the topcoat is prepared from about 0.01 to about 10  
29 percent based on the total weight of the topcoat of an ultraviolet light stabilizer.

1 110. The process of claim 81, wherein the primer is also prepared from a moisture penetration  
2 inhibitor.

4 111. The process of claim 81, wherein the abrasive aggregate is present and comprised of a  
5 mixture of aluminum powder and aluminum pellets.

7 112. The process of claim 81, wherein the primer and topcoat are substantially free of solvents.

9 113. The process of claim 81, wherein the epoxide-containing toughening agent contains  
10 sulfur.

12 114. The process of claim 81, wherein the epoxide-containing toughening agent is a  
13 polysulfide, a polythioether, or a combination thereof.

15 115. An epoxy topcoat comprising a cured mixture that is formulated from  
16 an epoxy resin,  
17 an epoxide-containing toughening agent,  
18 optionally, an ultraviolet light stabilizer,  
19 a pigment,  
20 a glass fiber thixotrope and impact toughening agent,  
21 an optional abrasive aggregate,  
22 an optional fire retardant,  
23 an amine curing agent, and  
24 a rubber toughening agent.

26 116. The epoxy topcoat of claim 115, wherein the glass fiber has an average fiber diameter of  
27 about 0.2 to about 5 microns and a surface area as measured by BET of about 0.01 to about 25  
28 meters squared per gram.

1 117. The epoxy topcoat of claim 115, wherein the topcoat is formulated from about 10 to  
2 about 50 percent of the amine curing agent.

4 118. The epoxy topcoat of claim 115, wherein the topcoat is formulated from about 0.01 to  
5 about 10 percent of the epoxide-containing toughening agent.

7 119. The epoxy topcoat of claim 115, wherein the topcoat is formulated from about 0.01 to  
8 about 10 percent of the ultraviolet light stabilizer.

10 120. The epoxy topcoat of claim 115, wherein the topcoat is formulated from about 0.01 to  
11 about 45 percent of the abrasive aggregate.

13 121. The epoxy topcoat of claim 115, wherein the topcoat is formulated from about 0.01 to  
14 about 10 percent of the glass fiber.

16 122. The epoxy topcoat of claim 115, wherein the topcoat is formulated from about 0.01 to  
17 about 20 percent of the fire retardant.

19 123. The epoxy topcoat of claim 115, wherein the topcoat is formulated from about 0.01 to  
20 about 30 percent of the pigment.

22 124. The epoxy topcoat of claim 115, wherein the topcoat is formulated from about 20 to  
23 about 90 percent of the epoxy resin.

25 125. The epoxy topcoat of claim 115, wherein the topcoat is formulated from about 4 to about  
26 20 percent of the rubber toughening agent.

28 126. The epoxy topcoat of claim 115, wherein the epoxide-containing toughening agent  
29 contains sulfur.

1 127. The epoxy topcoat of claim 115, wherein the epoxide-containing toughening agent is a  
2 polysulfide, a polythioether, or a combination thereof.

3  
4 128. An epoxy primer comprising a cured mixture that is made from  
5 an amine curing agent,  
6 an epoxide-containing toughening agent,  
7 an optional fire retardant,  
8 an optional glass fiber thixotrope and impact toughening agent,  
9 an epoxy resin,  
10 a rubber toughening agent,  
11 a pigment,  
12 optionally, a corrosion inhibitor, and  
13 optionally, a moisture penetration inhibitor.

14  
15 129. The primer of claim 128, wherein the glass fiber is present and has an average fiber  
16 diameter of about 0.2 to about 5 microns and a surface area as measured by BET of about 0.01 to  
17 about 25 meters squared per gram.

18  
19 130. The primer of claim 128, wherein the mixture is also made from an abrasive aggregate.

20  
21 131. The primer of claim 128, wherein the primer is substantially free of solvents.

22  
23 132. The primer of claim 128, wherein the epoxide-containing toughening agent contains  
24 sulfur.

25  
26 133. The primer of claim 128, wherein the epoxide-containing toughening agent is a  
27 polysulfide, a polythioether, or a combination thereof.

28  
29 134. A process useful for providing a coating for a solid surface, comprising:  
30



1 applying a coating onto the solid surface, wherein the coating is prepared from  
2 an amine side which comprises a mixture of:  
3 an amine curing agent,  
4 a rubber toughening agent; and  
5 an epoxy side which comprises a mixture of:  
6 an epoxy resin,  
7 an epoxide-containing toughening agent, and  
8  
9 wherein the coating is also prepared from an optional fire retardant, an optional glass  
10 fiber thixotrope and impact toughening agent, a pigment, and an optional abrasive aggregate, and  
11  
12 wherein the surface may be primed or un-primed prior to application of the topcoat.  
13  
14 135. The process of claim 134 wherein the coating is also prepared from a corrosion inhibitor.  
15  
16 136. The process of claim 134 wherein the coating is also prepared from a moisture  
17 penetration inhibitor.  
18  
19 137. The process of claim 134 wherein the coating is also prepared from an ultraviolet light  
20 stabilizer.  
21  
22 138. The process of claim 134, wherein the epoxide-containing toughening agent contains  
23 sulfur.  
24  
25 139. The process of claim 134, wherein the epoxide-containing toughening agent is a  
26 polysulfide, a polythioether, or a combination thereof.  
27  
28 140. A method of manufacturing an epoxy side and an amine side for use in the formation of a  
29 coating, comprising:  
30

1 forming a mixture of an amine side from an amine curing agent and a rubber toughening  
2 agent,

3  
4 forming a mixture of an epoxy side from an epoxy resin and an epoxide-containing  
5 toughening agent,

6  
7 wherein the amine side is also formed from an optional fire retardant, an optional glass  
8 fiber thixotrope and impact toughening agent, a pigment, an optional abrasive aggregate, a  
9 moisture penetration inhibitor, an ultraviolet light stabilizer, or combination thereof, and

10  
11 wherein the epoxy side is also formed from an optional fire retardant, an optional glass  
12 fiber thixotrope and impact toughening agent, a pigment, an optional abrasive aggregate, a  
13 moisture penetration inhibitor, an ultraviolet light stabilizer, or combination thereof.

14  
15 141. An epoxy coating formulated from (a) an amine curing agent, (b) an epoxide-containing  
16 toughening agent, (c) an epoxy resin, (d) a rubber toughening agent, and (e) an optional fire  
17 retardant, an optional glass fiber thixotrope and impact toughening agent, a pigment, a corrosion  
18 inhibitor, a moisture penetration inhibitor, an ultraviolet light stabilizer, an optional abrasive  
19 aggregate, or a combination thereof.

20  
21 142. The coating of claim 141, wherein the coating is prepared from about 20 to about 60  
22 percent of the amine curing agent.

23  
24 143. The coating of claim 141, wherein the coating is formulated from about 0.01 to about 30  
25 percent of the epoxide-containing toughening agent.

26  
27 144. The coating of claim 141, wherein the coating is formulated from about 0.01 to about 15  
28 percent based on the total weight of the coating of the corrosion inhibitor.

1 145. The coating of claim 141, wherein the coating is formulated from about 0.01 to about 10  
2 percent based on the total weight of the coating of the glass fiber.

4 146. The coating of claim 141, wherein the coating is formulated from about 0.01 to about 3  
5 percent based on the total weight of the coating of an moisture penetration inhibitor.

7 147. The coating of claim 141, wherein the coating is prepared from about 0.01 to about 35  
8 percent based on the total weight of the coating of the fire retardant.

10 148. The coating of claim 141, wherein the coating is prepared from about 10 to about 90  
11 percent based on the total weight of the coating of the epoxy resin.

13 149. The coating of claim 141, wherein the coating is prepared from about 4 to about 40  
14 percent based on the total weight of the coating of the rubber toughening agent.

16 150. The coating of claim 141, wherein the coating is prepared from about 0.01 to about 30  
17 percent based on the total weight of the coating of the pigment.

19 151. The coating of claim 141, wherein the coating is prepared from about 0.01 to about 10  
20 percent based on the total weight of the coating of the ultraviolet light stabilizer.

22 152. The coating of claim 141, wherein the coating is prepared from about 0.01 to about 45  
23 percent based on the total weight of the coating of the abrasive aggregate.

25 153. The coating of claim 141, wherein the coating is substantially free of solvents.

27 154. The coating of claim 142, wherein the glass fiber is present and has average fiber  
28 diameter of about 0.2 to about 5 microns and a surface area as measured by BET of about 0.01 to  
29 about 25 meters squared per gram.

1 155. The coating of claim 142, wherein the epoxide-containing toughening agent contains  
2 sulfur.

3  
4 156. The coating of claim 142, wherein the epoxide-containing toughening agent is a  
5 polysulfide, a polythioether, or a combination thereof.

6  
7 157. A process useful for providing a coating for a solid surface, comprising: applying a  
8 coating onto the solid surface, wherein the coating is prepared from (a) an amine curing agent,  
9 (b) an epoxide-containing toughening agent, (c) an epoxy resin, (d) a rubber toughening agent,  
10 and (e) an optional fire retardant, a glass fiber thixotrope and impact toughening agent, an  
11 optional pigment, an optional corrosion inhibitor, an optional moisture penetration inhibitor, an  
12 optional ultraviolet light stabilizer, an optional abrasive aggregate, or a combination thereof.

13  
14 158. The process of claim 157, wherein the coating is prepared from about 20 to about 60  
15 percent of the amine curing agent.

16  
17 159. The process of claim 157, wherein the coating is formulated from about 0.01 to about 30  
18 percent of the epoxide-containing toughening agent.

19  
20 160. The process of claim 157, wherein the coating is formulated from about 0.01 to about 15  
21 percent based on the total weight of the coating of the corrosion inhibitor.

22  
23 161. The process of claim 157, wherein the coating is formulated from about 0.01 to about 10  
24 percent based on the total weight of the coating of the glass fiber.

25  
26 162. The process of claim 157, wherein the coating is formulated from about 0.01 to about 3  
27 percent based on the total weight of the coating of an moisture penetration inhibitor.

28  
29 163. The process of claim 157, wherein the coating is prepared from about 0.01 to about 35  
30 percent based on the total weight of the coating of the fire retardant.

1  
2 164. The process of claim 157, wherein the coating is prepared from about 10 to about 90  
3 percent based on the total weight of the coating of the epoxy resin.

4  
5 165. The process of claim 157, wherein the coating is prepared from about 4 to about 40  
6 percent based on the total weight of the coating of the rubber toughening agent.

7  
8 166. The process of claim 157, wherein the coating is prepared from about 0.01 to about 30  
9 percent based on the total weight of the coating of the pigment.

10  
11 167. The process of claim 157, wherein the coating is prepared from about 0.01 to about 10  
12 percent based on the total weight of the coating of the ultraviolet light stabilizer.

13  
14 168. The process of claim 157, wherein the coating is prepared from about 0.01 to about 45  
15 percent based on the total weight of the coating of the abrasive aggregate.

16  
17 169. The process of claim 157, wherein the coating is substantially free of solvents.

18  
19 170. The process of claim 157, wherein the glass fiber is present and has average fiber  
20 diameter of about 0.2 to about 5 microns and a surface area as measured by BET of about 0.01 to  
21 about 25 meters squared per gram.

22  
23 171. The process of claim 157, wherein the epoxide-containing toughening agent contains  
24 sulfur.

25  
26 172. The process of claim 157, wherein the epoxide-containing toughening agent is a  
27 polysulfide, a polythioether, or a combination thereof.

28  
29 173. The epoxy topcoat of claim 115 wherein the rubber toughening agent is an amine-  
30 terminated butadiene nitrile, a carboxy-terminated butadiene nitrile, or combination thereof.

1  
2 174. The epoxy topcoat of claim 115, wherein the glass fiber has an average fiber diameter of  
3 about 0.2 to about 5 microns and a surface area as measured by BET of about 0.01 to about 25  
4 meters squared per gram; wherein the topcoat is formulated from about 10 to about 50 percent of  
5 the amine curing agent; wherein the topcoat is formulated from about 0.01 to about 10 percent of  
6 the epoxide-containing toughening agent; wherein the topcoat is formulated from about 0.01 to  
7 about 10 percent of the ultraviolet light stabilizer; wherein the topcoat is formulated from about  
8 0.01 to about 10 percent of the glass fiber; wherein the topcoat is formulated from about 20 to  
9 about 90 percent of the epoxy resin; wherein the topcoat is formulated from about 4 to about 20  
10 percent of the rubber toughening agent; and wherein the epoxide-containing toughening agent is  
11 a polysulfide, a polythioether, or a combination thereof.  
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